

LISTING OF CLAIMS

1 1. (previously amended) In a network device configured by a configuration command, a
2 method for automatically re-constructing said configuration command based on data stored
3 in a configuration database during parsing and processing of the configuration command by
4 the network device, the method comprising the steps of:

5 creating and storing a linear command regeneration template that includes at least one
6 linear node template in a memory, each linear node template corresponding to
7 a command element in said configuration command; and
8 regenerating said configuration command based on said linear command regeneration
9 template and based on data from the configuration database.

1 2. (previously amended) The method of Claim 1 wherein the step of creating and storing
2 a linear command regeneration template further comprises:

3 storing a begin option node template in said at least one linear node template.

1 3. (previously amended) The method of Claim 1 wherein the step of creating and
2 storing a linear command regeneration template further comprises:

3 storing a next option node template in said at least one linear node template.

1 4. (previously amended) The method of Claim 1 wherein the step of creating and
2 storing a linear command regeneration template further comprises:

3 storing an end option node template in said at least one linear node template.

1 5. (previously amended) The method of Claim 1 wherein the step of creating and
2 storing a linear command regeneration template further comprises:

3 storing a begin option node template, a next option node template, and an end option
4 node template in said at least one linear node template.

1 6. (previously amended) The method of Claim 1 wherein the step of regenerating said
2 configuration command further comprises the step of:

3 filtering said linear command regeneration template to locate at least one linear node
4 template.

1 7. (previously amended) The method of Claim 1 wherein the step of regenerating said
2 configuration command further comprises the step of:

3 scanning the linear command regeneration template to find a begin option node
4 template, said begin option node template including an identification.

1 8. (Cancelled)

1 9. (previously amended) The method of Claim 7, wherein the step of regenerating said
2 configuration command further comprises the steps of:

3 scanning the linear command regeneration template to find an end option node
4 template that includes said identification of the begin option node template.

1 10. (previously amended) The method of Claim 6 wherein the step of regenerating said
2 configuration command further comprises the step of:

3 passing said filtered linear node template from the linear command regeneration
4 template to an evaluate branches process.

1 11. (previously amended) The method of Claim 10 further comprising the step of:
2 evaluating at least one branch in said filtered linear node template from the linear
3 command regeneration template by said evaluate branches process.

1 12. (previously amended) The method of Claim 10 further comprising the step of:
2 finding a branch in said filtered linear node template.

1 13. (previously amended) The method of Claim 12, further comprising the step of:
2 validating said branch based on data from said configuration database.

1 14. (currently amended) A computer-readable medium carrying one or more sequences
2 of instructions for automatically re-constructing a network device configuration command
3 that was used to configure a network device based on data stored in a configuration database,

4 wherein parsing and processing of the configuration command by the network device
5 resulted in storage of data in the configuration database, and wherein execution of the
6 sequences of instructions by one or more processors causes said one more processors to carry
7 out the steps of:

8 creating and storing a linear command regeneration template that includes at least one
9 linear node template in a memory, each linear node template corresponding to
10 a command element in said configuration command; and
11 regenerating said configuration command based on said linear command regeneration
12 template and based ~~one~~ on data from the configuration database.

1 15. (previously amended) The medium of Claim 14 wherein said one or more sequences
2 of instructions for creating and storing a linear command regeneration template further
3 comprises one or more sequences of instructions for:

4 storing a begin option node template in said at least one linear node template.

1 16. (previously amended) The medium of Claim 14 wherein said one or more sequences
2 of instructions for creating and storing a linear command regeneration template further
3 comprises one or more sequences of instructions for:

4 storing a next option node template in said at least one linear node template.

1 17. (previously amended) The medium of Claim 14 wherein said one or more sequences
2 of instructions for creating and storing a linear command regeneration template further
3 comprises one or more sequences of instructions for:

4 storing an end option node template in said at least one linear node template.

1 18. (currently amended) The medium of Claim 14 wherein said one or more sequences
2 of instructions for creating and storing a linear command regeneration template further
3 comprises one or more sequences of instructions for:

4 storing a begin option node template, a next option node template, and an end option
5 node template in said at least one linear node template.

6 19. (previously amended) The medium of Claim 14 wherein said one or more sequences
7 of instructions for regenerating said configuration command further comprises one or more
8 sequences of instructions for:

9 filtering said linear command regeneration template to locate at least one linear node
10 template.

1 20. (previously amended) The medium of Claim 14 wherein said one or more sequences
2 of instructions for regenerating said configuration command further comprises one or
3 more sequences of instructions for:

4 scanning the linear command regeneration template to find a begin option node
5 template, said begin option node template including an identification.

1 21. (cancelled)

1 22. (previously amended) The medium of Claim 20, wherein said one or more sequences
2 of instructions for regenerating said configuration command further comprises one or
3 more sequences of instructions for:

4 scanning the linear command regeneration template to find an end option node
5 template that includes said identification of the begin option node template.

1 23. (previously amended) The medium of Claim 19 wherein the one or more sequences
2 of instructions for regenerating said configuration command further comprises one or
3 more sequences of instructions for:

4 passing said filtered linear node template from the linear command regeneration
5 template to an evaluate branches process.

1 24. (previously amended) The medium of Claim 23 further comprising one or more
2 sequences of instructions for:

3 evaluating at least one branch in said filtered linear node template from the linear
4 command regeneration template by said evaluate branches process.

1 25. (previously amended) The medium of Claim 23 further comprising one or more
2 sequences of instructions for:
3 finding a branch in said filtered linear node template.

1 26. (currently amended) The medium of Claim 25 further comprising one or more
2 sequences of instructions for:
3 validating said branch based ~~one~~ on data from said configuration database.

1 27-39 (cancelled)

1 40. (previously amended) In a network device configured by a configuration command,
2 an apparatus for automatically re-constructing said configuration command based on data
3 stored in a configuration database during parsing and processing of the configuration
4 command by the network device, the apparatus comprising:

5 means for creating and storing a linear command regeneration template that includes
6 at least one linear node template in a memory, each linear node template
7 corresponding to a command element in said configuration command; and
8 means for regenerating said configuration command based on said linear command
9 regeneration template and based on data from the configuration database.

1 41. (previously amended) The apparatus of Claim 40 wherein said means for creating
2 and storing a linear command regeneration template further comprises:

3 means for storing a begin option node template in said at least one linear node
4 template.

1 42. (previously amended) The apparatus of Claim 40 wherein said means for creating
2 and storing a linear command regeneration template further comprises:

3 means for storing a next option node template in said at least one linear node
4 template.

1 43. (previously amended) The apparatus of Claim 40 wherein said means for creating
2 and storing a linear command regeneration template further comprises:
3 means for storing an end option node template in said at least one linear node
4 template.

1 44. (previously amended) The apparatus of Claim 40 wherein said means for creating
2 and storing a linear command regeneration template further comprises:
3 means for storing a begin option node template, a next option node template, and an
4 end option node template in said at least one linear node template.

1 45. (previously amended) The apparatus of Claim 40 wherein said means for
2 regenerating said configuration command further comprises:
3 means for filtering said linear command regeneration template to locate at least one
4 linear node template.

1 46. (previously amended) The apparatus of Claim 45 wherein said means for filtering
2 said linear command regeneration template to locate comprises:
3 means for scanning said linear command regeneration template to find a begin option
4 node template, said begin option node template including an identification.

1 47. (currently amended) A method of automatically re-constructing a network device
2 configuration command based on configuration data stored in the network device, wherein
3 parsing and processing of the configuration command resulted in storage of the configuration
4 data, wherein the command comprises at least one command element that can have a
5 plurality of values, the method comprising the computer-implemented steps of:
6 creating and storing at least one linear node in a parse tree for representing said at
7 least one command element, wherein said linear node comprises a begin
8 option node having a single entrance; a next option node coupled to said ~~being~~
9 begin option node having a single entrance; and an end option node coupled to
10 said ~~being~~ begin option node wherein said end option node has a single exit;

11 creating and storing a linear command regeneration template in a memory, wherein
12 the linear command regeneration template comprises information identifying
13 how to regenerate a configuration command; and
14 regenerating the command based on the linear command regeneration template and
15 based on data from said configuration data stored in the network device.

1 48. (previously presented) The method of Claim 47, wherein creating and storing at least
2 one linear node further comprises connecting a plurality of branches to said begin option
3 node.

1 49. (previously presented) The method of claim 48 wherein each branch in said plurality
2 of branches represents a different value of said at least one command element.

1 50. (previously presented) The method of claim 48, wherein each branch is associated
2 with a next option node.

1 51. (previously presented) The method of claim 47, wherein said parse tree further
2 comprises a binary node.

1 52. (currently amended) The method of claim 47, wherein said command includes
2 another command element that can have a plurality of values, said method further comprising
3 representing said another command element by another linear node in said parse tree wherein
4 said another linear node comprises a second ~~being~~ begin option node having a single entrance
5 connected to said exit of said end option node, a second next option node coupled to said
6 another begin option node, and a second end option node coupled to said another begin
7 option node wherein said another end option node has a single exit.

1 53. (previously presented) A method of automatically regenerating a network device
2 configuration command based on configuration data stored in the network device, wherein
3 parsing and processing of the configuration command resulted in storage of the configuration
4 data, the method comprising the computer-implemented steps of:

5 creating and storing a linear command regeneration template including a linear node
6 template, wherein the linear node template comprises a begin option node
7 template, a next option node template, and an end option node template;
8 regenerating the configuration command based on the linear command regeneration
9 template and based on data from a database, by:
10 scanning the linear command regeneration template to find an end option node
11 template that includes an identification of the begin option node template;
12 passing the linear node template from the linear command regeneration template to an
13 evaluate branches process;
14 evaluating at least one branch in the linear node template from the linear command
15 regeneration template by the evaluate branches process;
16 finding a branch in the linear node template; and
17 validating the branch using the configuration data stored in the network device.